

§ 23.975 Fuel tank vents and carburetor vapor vents.

(a) Each fuel tank must be vented from the top part of the expansion space. In addition—

(1) Each vent outlet must be located and constructed in a manner that minimizes the possibility of its being obstructed by ice or other foreign matter;

(2) Each vent must be constructed to prevent siphoning of fuel during normal operation;

(3) The venting capacity must allow the rapid relief of excessive differences of pressure between the interior and exterior of the tank;

(4) Airspaces of tanks with interconnected outlets must be interconnected;

(5) There may be no point in any vent line where moisture can accumulate with the airplane in either the ground or level flight attitudes, unless drainage is provided. Any drain valve installed must be accessible for drainage;

(6) No vent may terminate at a point where the discharge of fuel from the vent outlet will constitute a fire hazard or from which fumes may enter personnel compartments; and

(7) Vents must be arranged to prevent the loss of fuel, except fuel discharged because of thermal expansion, when the airplane is parked in any direction on a ramp having a one-percent slope.

(b) Each carburetor with vapor elimination connections and each fuel injection engine employing vapor return provisions must have a separate vent line to lead vapors back to the top of one of the fuel tanks. If there is more than one tank and it is necessary to use these tanks in a definite sequence for any reason, the vapor vent line must lead back to the fuel tank to be used first, unless the relative capacities of the tanks are such that return to another tank is preferable.

(c) For acrobatic category airplanes, excessive loss of fuel during acrobatic maneuvers, including short periods of inverted flight, must be prevented. It must be impossible for fuel to siphon from the vent when normal flight has been resumed after any acrobatic ma-

neuver for which certification is requested.

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§ 23.977 Fuel tank outlet.

(a) There must be a fuel strainer for the fuel tank outlet or for the booster pump. This strainer must—

(1) For reciprocating engine powered airplanes, have 8 to 16 meshes per inch; and

(2) For turbine engine powered airplanes, prevent the passage of any object that could restrict fuel flow or damage any fuel system component.

(b) The clear area of each fuel tank outlet strainer must be at least five times the area of the outlet line.

(c) The diameter of each strainer must be at least that of the fuel tank outlet.

(d) Each strainer must be accessible for inspection and cleaning.

[Amdt. 23-17, 41 FR 55465, Dec. 20, 1976, as amended by Amdt. 23-43, 58 FR 18973, Apr. 9, 1993]

§ 23.979 Pressure fueling systems.

For pressure fueling systems, the following apply:

(a) Each pressure fueling system fuel manifold connection must have means to prevent the escape of hazardous quantities of fuel from the system if the fuel entry valve fails.

(b) An automatic shutoff means must be provided to prevent the quantity of fuel in each tank from exceeding the maximum quantity approved for that tank. This means must—

(1) Allow checking for proper shutoff operation before each fueling of the tank; and

(2) For commuter category airplanes, indicate at each fueling station, a failure of the shutoff means to stop the fuel flow at the maximum quantity approved for that tank.

(c) A means must be provided to prevent damage to the fuel system in the event of failure of the automatic shutoff means prescribed in paragraph (b) of this section.